METHOD AND APPARATUS FOR SCALABLE DISAMBIGUATED COHERENCE IN SHARED STORAGE HIERARCHIES

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001]   This application is a continuation and claims the benefit of *now U.S. Patent 6,651,145.* application Ser. No. 09/677,122, filed September 29, 2000, ~~currently pending.~~

FIELD OF THE INVENTION

[0002]   This invention relates generally to shared storage hierarchies in multiprocessing systems, and in particular to use of an exclusive dirty status in a coherence protocol to disambiguate ownership and modification status for memory references in a shared multi-level storage hierarchy.

BACKGROUND OF THE INVENTION

[0003]   In a multiprocessing system with a shared multi-level storage hierarchy, typically comprising a shared cache storage, one processor may request access from a shared cache storage to data that is in a state of ownership by another processor. The requesting processor does not know if the requested data in the shared cache storage is valid or if it has been modified by another processor in a private storage at another level of the storage hierarchy. Therefore the requested data in the shared cache storage is not useful to the requesting processor until its actual status can be